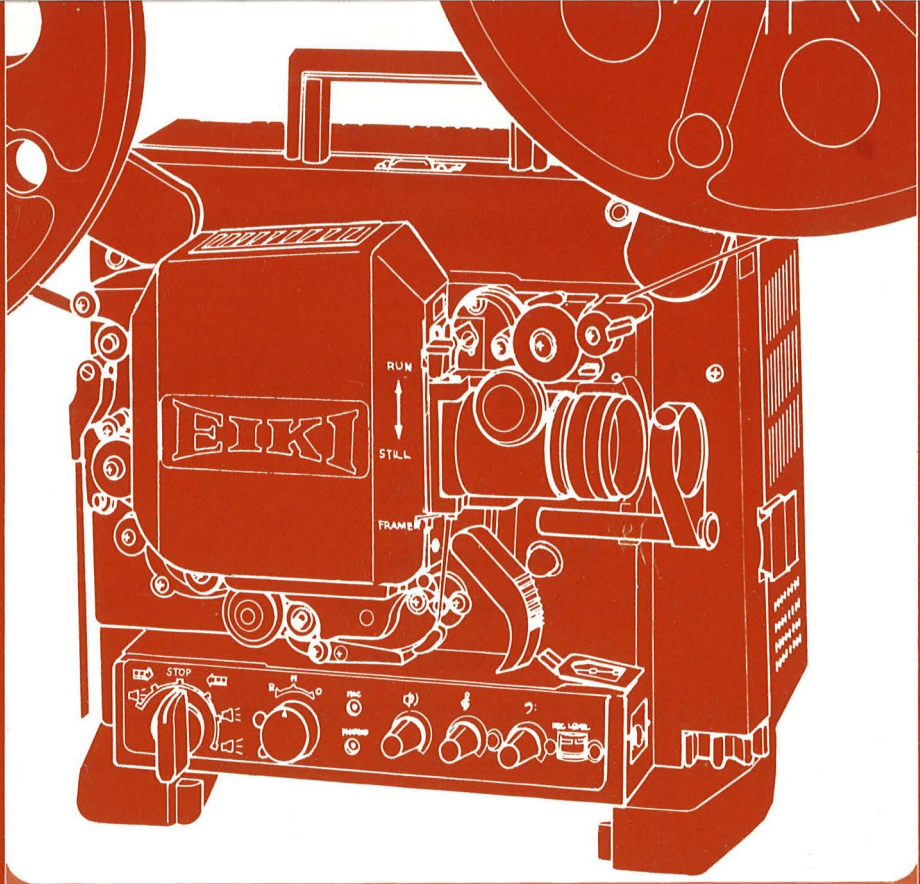

OWNER'S INSTRUCTION MANUAL

16mm Sound Projector

NST-0/1/2/3
NT-0/1/2/3

EIKI

When the show must go on.

NST-0/1/2/3•NT-0/1/2/3

Simple Operation

Easy Maintenance

Trouble-Free Use

This Operator's Manual is easy to read, informative and helpful. Please read it carefully. Before you try it your way, please try it our way.

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IMPORTANT SAFEGUARDS

When using your EIKI 16mm projector, basic safety precautions should always be followed, including the following:

1. Read and understand all instructions.
2. Close supervision is necessary when any equipment is used by or near children. Do not leave projector unattended while in use.
3. Care must be taken as burns can occur when changing lamp. Use lamp ejection lever provided to avoid possibility of burns from a hot lamp.
4. Do not operate projector with a damaged cord or if projector has been dropped or damaged — until it has been examined by a qualified service technician.
5. Do not let the cord hang over edge of the table or counter or touch hot surfaces.
6. If an extension cord is necessary, a cord with a suitable current rating should be used. Cords rated for less amperage than the projector may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
7. Always unplug projector from electrical outlet when not in use. Never yank cord to pull plug from outlet. Grasp plug and pull to disconnect.
8. Let projector cool completely before putting away. Return cord to cord storage space provided when storing projector.
9. To protect against electrical shock hazards, do not operate this projector in the rain or when wet.

IMPORTANT SAFEGUARDS (cont'd)

10. To avoid electric shock hazard, do not disassemble this projector, but refer to a qualified service technician when service or repair work is required. Improper repairs or reassembly can cause electric shock hazard when the projector is used subsequently.
11. Do not open lamphouse cover when projector motor is running.
12. Observe the caution plate by rear cover latch "DISCONNECT POWER SUPPLY BEFORE OPENING".
13. Do not look directly at an operating lamp with unprotected eyes.
14. Observe the caution plate inside of lamphouseing. "DISCONNECT POWER BEFORE REPLACING LAMPS".

SAVE THESE INSTRUCTIONS

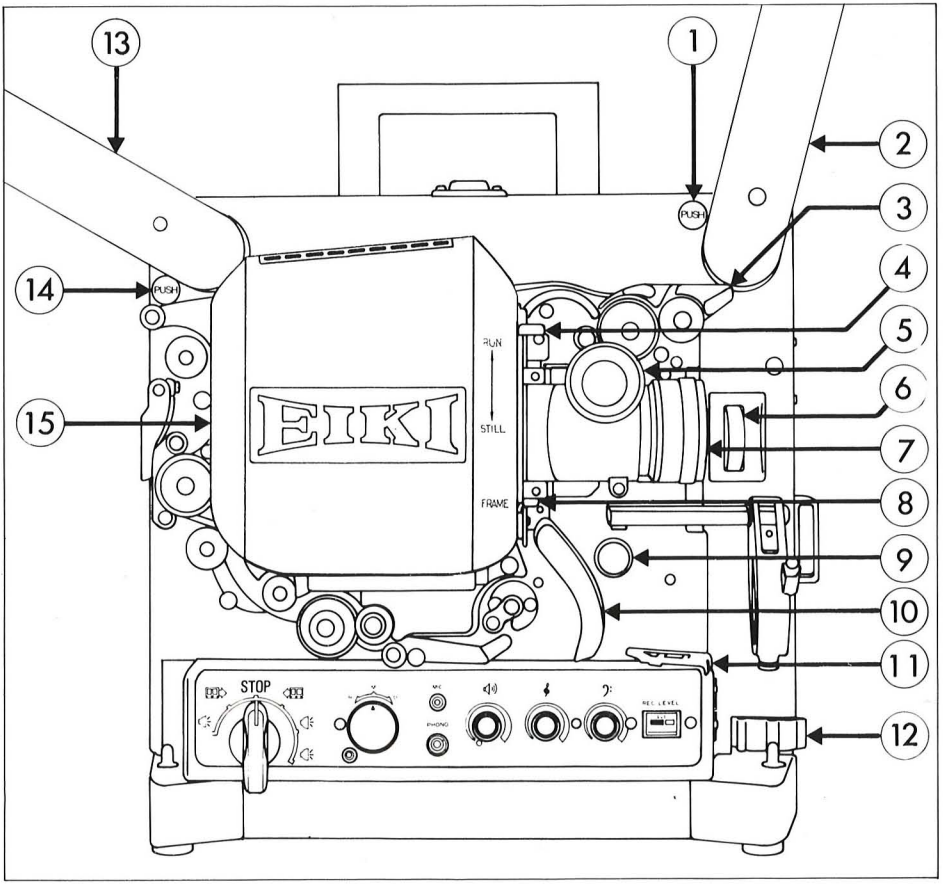
SPECIFICATIONS

NST Models . . . . . Reel-to-Reel Automatic Threading

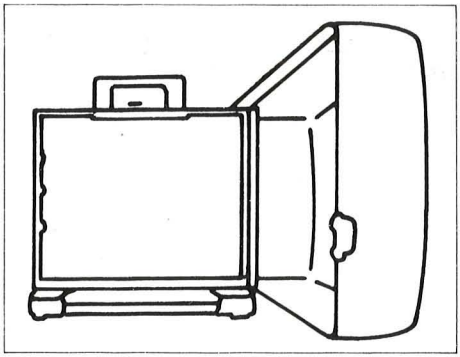
NT Models . . . . . Self Threading

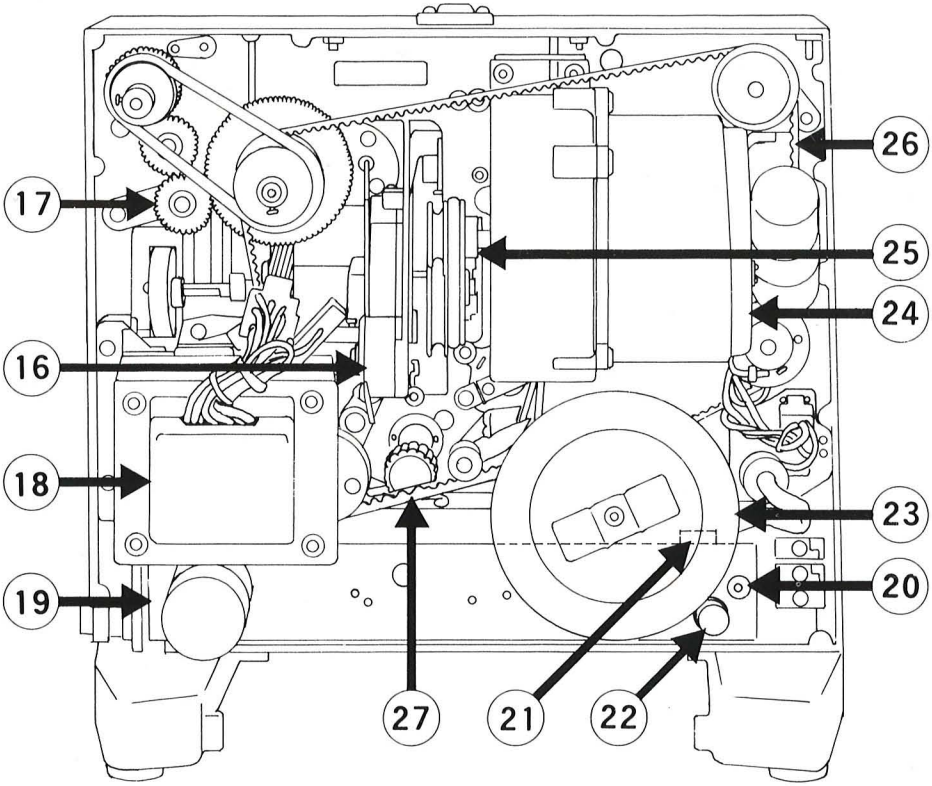
Power Source	Projectors available from 100 to 240V 50, 60Hz, dual (switchable) voltage also available
Typical power consumption	430-450W
Lamp	Tungsten halogen 24V-250W (type ELC)
Exciter lamp	4V, 0.75 amp (type BRK)
Standard lens	50mm (2") f 1.2, 6-element coated
Resolution	Excess of 160 lines per mm (center)
Shutter	2 bladed or 3 bladed
Motor	Induction with capacitor
Film speed	24 and 18 FPS, sound and silent
Loop restorer	Automatic
Lamp brightness	1200LX (900 Lumen max)
Reverse projection	Yes
Still picture	Yes
Rewind	High-speed without reel change
Reel capacity	600m (2000ft)
Speaker	Model 0 type, 12.5cm (5") internal speaker only Model 1 & 2, with two 12.5cm (5") removable front cover speakers and 12.5cm (5") internal speaker Model 3 type, two 12.5cm (5") removable front cover speakers
Amplifier	Solid state 20W RMS
Tone Control	Treble and bass separate controls
Size	29cm x 35cm x35cm (11.4"x13.8"x13.8")
Weight	16.5kg (36.4 lbs)

MAIN PARTS OF THE PROJECTOR



1. Supply arm lock button
2. Supply arm
3. Film channel and rewind lever
4. Still picture lever
5. Focus knob
6. Inching knob
7. Lens
8. Framing lever
9. Pilot lamp
10. Automatic threading control lever
11. Film trimmer
12. Elevator knob
13. Take-up arm
14. Take-up arm lock button
15. Lamp house cover

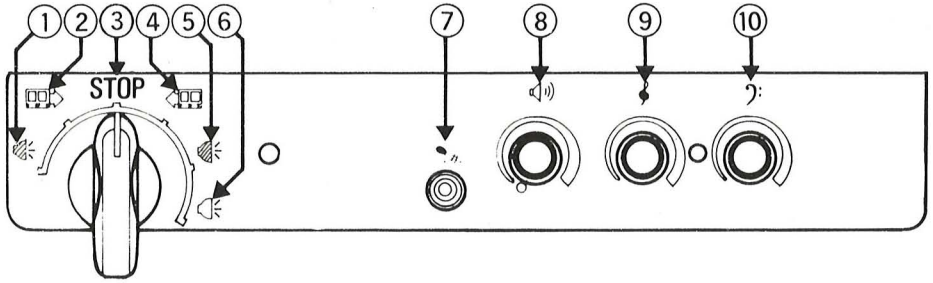




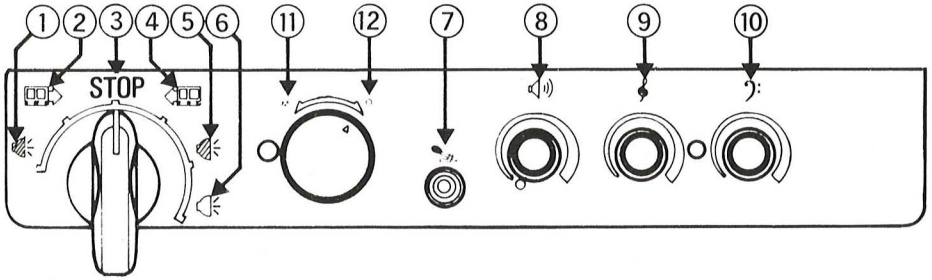
16. Cam tank module
17. Rewind gear
18. Transformer module
19. Amplifier module
20. Rear cover speaker jack (0/1/2 type)
21. Exciter lamp fuse
22. Amplifier fuse
23. Flywheel
24. Motor-fan module
25. Motor drive belt
26. Main drive belt
27. Automatic loop restorer

EXPLANATION OF SWITCH PLATE

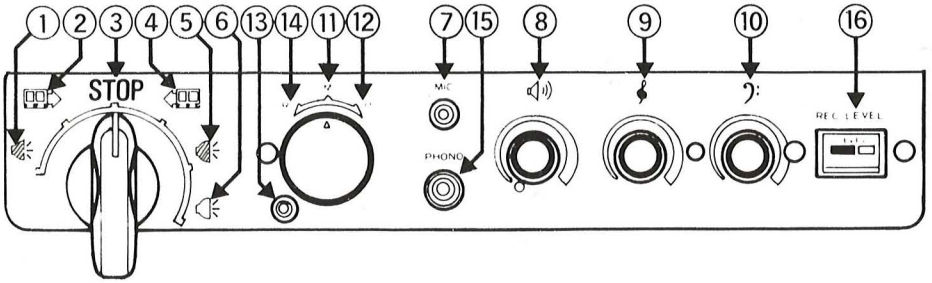
Model NST/NT-0, 1



Model NST/NT-2



Model NST/NT-3



All Models

1. Lamp low (Reverse)
2. Reverse
3. Stop
4. Forward
5. Lamp low (Forward)
6. Lamp high (Forward)
7. MIC input
8. Volume & amp switch
9. Treble control
10. Bass control

Additional on NST/NT-2

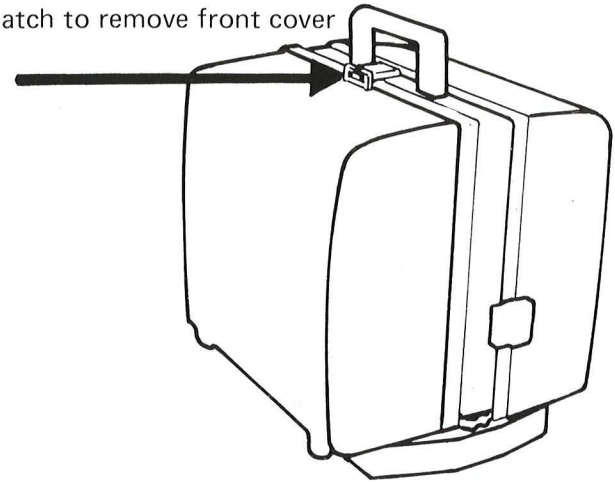
11. Magnetic playback
12. Optical playback

Additional on NST/NT-3

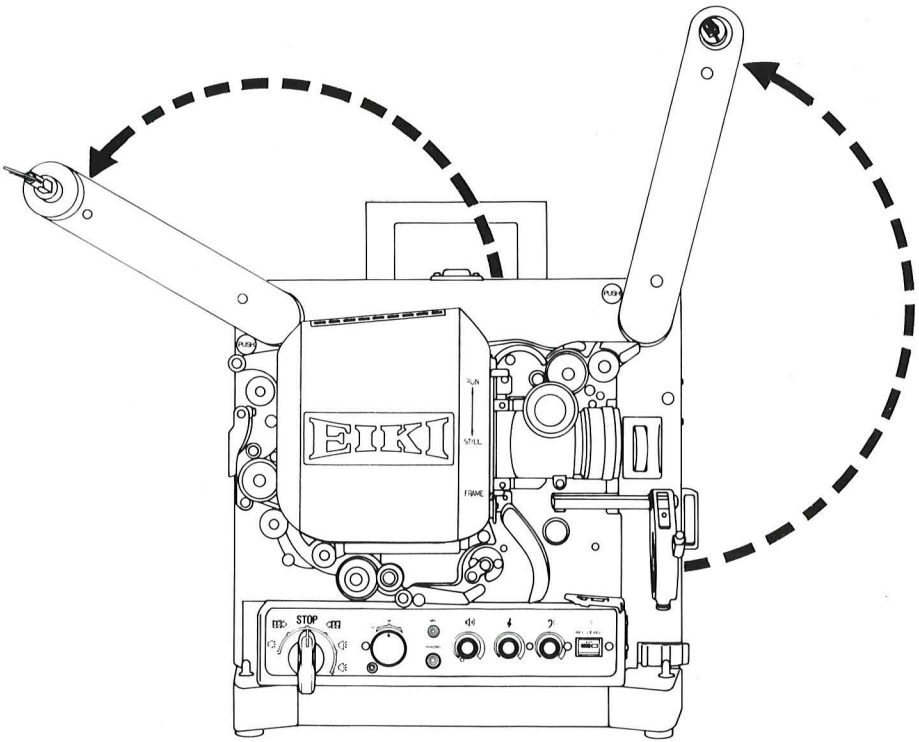
13. Recording lock button
14. Recording
15. PHONO input
16. Recording level indicator

SETTING UP THE PROJECTOR

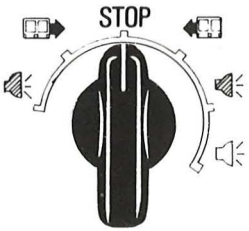
1. Lift latch to remove front cover



2. Raise both reel arms until they snap in place.

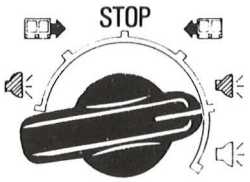


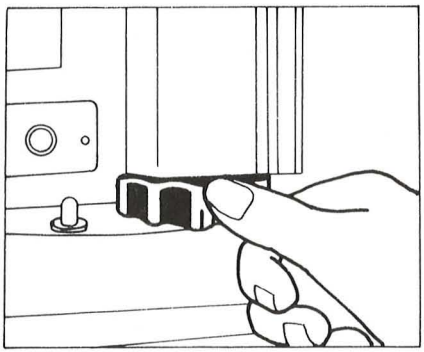
3. Set function switch to STOP position.



4. Connect power plug to proper outlet.

5. To turn lamp on, rotate function switch to the FORWARD lamp on position.





6. Position projector for the appropriate size image as desired. Adjust elevator knob to achieve the required image height. (See chart below for appropriate lens, distance and screen size.)

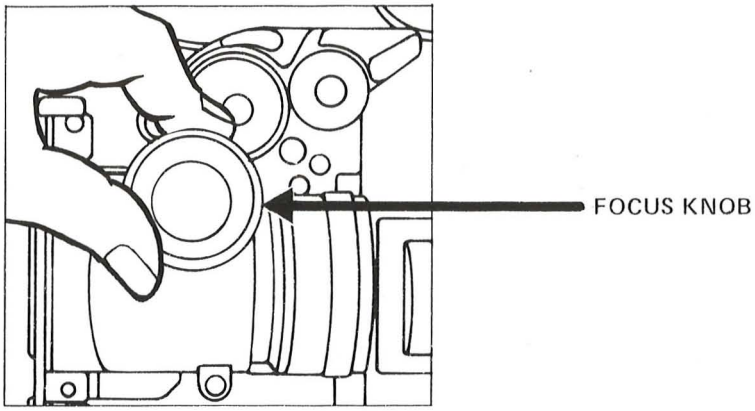
SCREEN SIZE CHARTS IN METERS

Distance / Lens		3m	5	10	15	20	25	30	40
38mm	H	0.56	0.94	1.89	2.84	3.79	4.74	5.69	7.58
	W	0.76	1.26	2.53	3.80	5.07	6.34	7.61	10.15
50	H	0.43	0.72	1.44	2.16	2.88	3.60	4.32	5.76
	W	0.57	0.96	1.93	2.89	3.86	4.82	5.79	7.72
65	H	0.33	0.55	1.10	1.66	2.21	2.77	3.32	4.43
	W	0.44	0.74	1.48	2.22	2.96	3.71	4.45	5.93
76	H	0.28	0.47	0.94	1.42	1.89	2.37	2.84	3.79
	W	0.38	0.63	1.26	1.90	2.53	3.17	3.80	5.07
100	H	0.21	0.36	0.72	1.08	1.44	1.80	2.16	2.88
	W	0.28	0.48	0.96	1.44	1.93	2.41	2.89	3.86

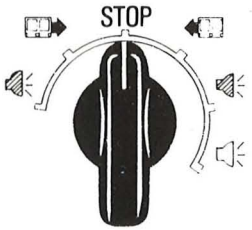
SCREEN SIZE CHARTS IN INCHES

Distance / Lens		8'	10'	12'	15'	20'	25'	30'	35'	40'	45'	50'	60'	75'	100'
1"	H	2'2"	2'9"	3'4"	4'2"	5'7"	6'11"	8'4"	9'9"						
	W	2'11"	3'8"	4'5"	5'7"	7'5"	9'4"	11'3"	13'1"						
1.5"	H	1'5"	1'10"	2'2"	2'9"	3'8"	4'7"	5'7"	6'6"	7'5"	8'4"	9'4"			
	W	1'11"	2'5"	2'11"	3'8"	4'11"	6'2"	7'6"	8'9"	10'0"	11'3"	12'5"			
2.0"	H		1'4"	1'8"	2'1"	2'9"	3'5"	4'2"	4'10"	5'7"	6'3"	6'11"	8'4"	10'5"	13'11"
	W		1'10"	2'2"	2'9"	3'8"	4'8"	5'7"	6'6"	7'5"	8'5"	9'4"	11'3"	14'0"	18'9"
3.0"	H						2'3"	2'9"	3'3"	3'8"	4'2"	4'7"	5'7"	6'11"	9'3"
	W						3'1"	3'8"	4'4"	4'11"	5'7"	6'2"	7'5"	9'4"	12'6"
4.0"	H						1'8"	2'1"	2'5"	2'9"	3'1"	3'5"	4'2"	5'2"	6'11"
	W						2'3"	2'9"	3'3"	3'8"	4'2"	4'8"	5'7"	7'0"	9'4"

7. Adjust focus for clean and sharply illuminated screen.



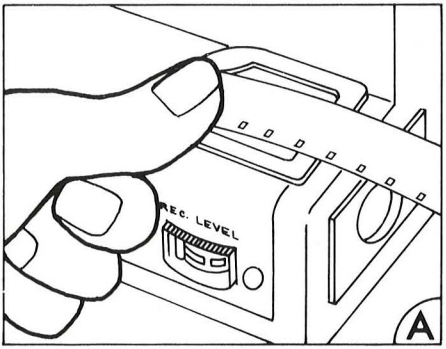
8. Return function switch to STOP.



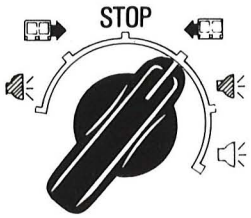
NOTE: Make sure the flywheel (see Page 3, No. 23) be installed before operating.

THREADING: FULLY AUTOMATIC THREADING (REEL-TO-REEL) MODELS NST-0/1/2/3

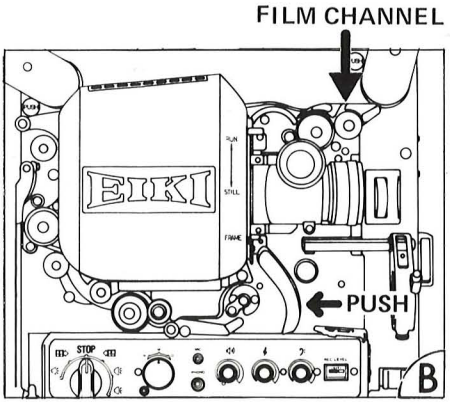
1. Place EIKI-MATIC AUTO take-up REEL on take-up arm.
   Insert film in trimmer and cut. (Fig. A)
   NOTE: New trimmer can be used with Estar or Mylar-base film.



2. Turn function switch to FORWARD position (◀□)



3. Push automatic threading control lever to SELF-THREAD position. (Fig. B).
4. Insert film leader into film channel. (Fig. B)
   Film threads . . . EIKI MATIC REEL takes up film . . . and the automatic threading guides release automatically.

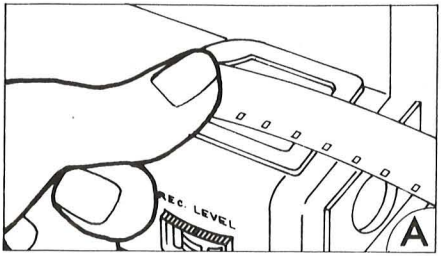


5. Switch lamp on.

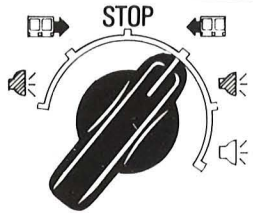
THREADING: SELF THREADING MODELS NT-0/1/2/3

1. Insert film in trimmer and cut. (Fig. A)

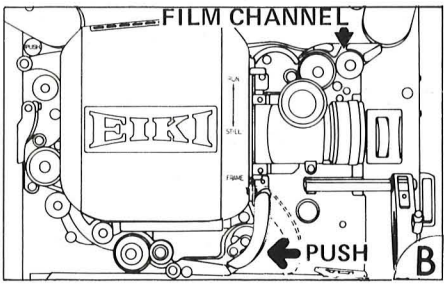
   NOTE: New trimmer can be used with Estar or Mylar-base film.



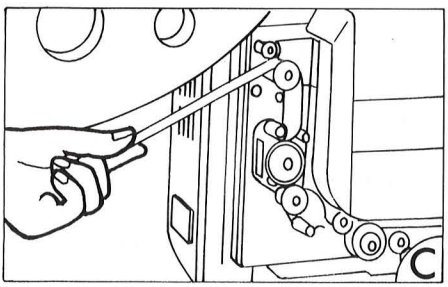
2. Turn function switch to FORWARD position (◀□).



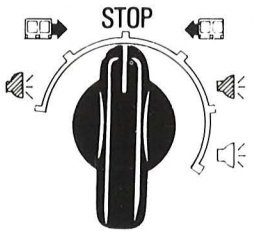
3. Push automatic threading control lever to SELF-THREAD position. (Fig. B).



4. Insert film leader into Film channel. (Fig. B) Film threads automatically. When a gentle tug is applied to film coming off last roller, the automatic threading guides will release. (Fig. C)

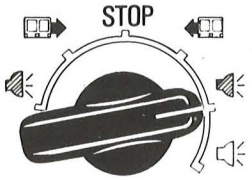


5. When sufficient film has passed through projector to reach take-up reel, return function switch to STOP.
6. Attach leading edge of film on to take-up reel.

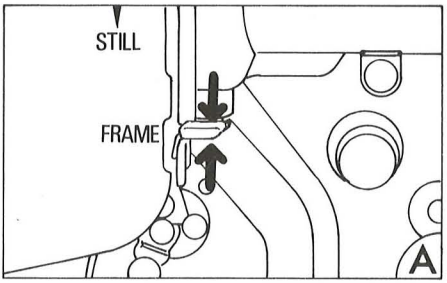


PROJECTING

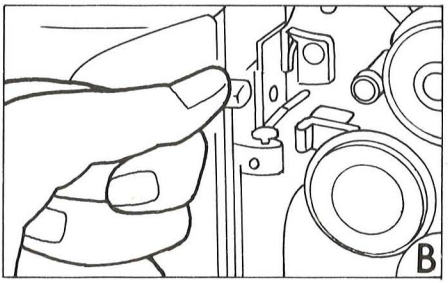
1. Turn function switch to FORWARD position (◀□) and LAMP on position (◀ , ◁).



2. Focus picture. Frame film by adjusting the framing lever. (Fig. A)

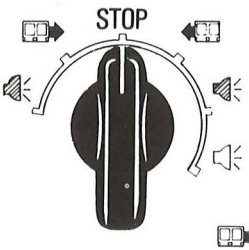


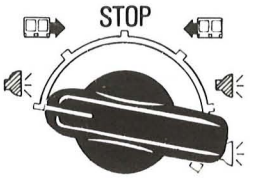
3. Turn volume switch on and adjust tone controls.



4. For STILL PICTURE, depress STILL PICTURE LEVER (Fig. B). (Focus adjustment may be necessary.) If shutter has stopped in front of picture, it may be moved by turning inching knob either direction until picture shows on screen.

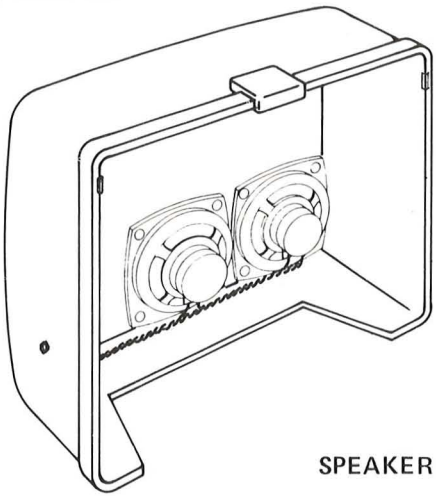
5. For REVERSE PROJECTION, turn function switch from STOP position to REVERSE (□▶) and LAMP on Position (◀).



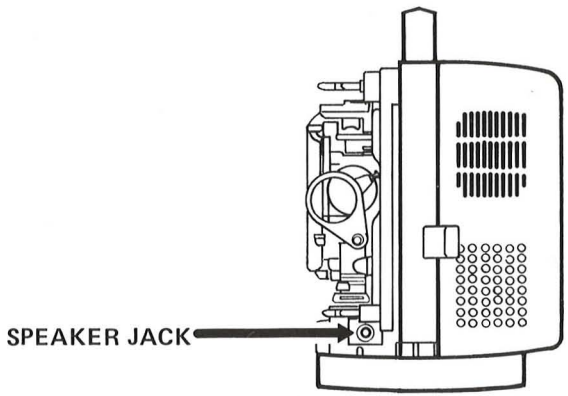


6. When film is completed, turn function switch to FORWARD position (◀□) and let motor run until all film is on the take-up reel.

7. For larger groups the extension speakers located in the front cover (1, 2, 3 types only) may be placed near the screen and plugged into the jack marked "speaker" located on the right of the projector.
   The internal speaker in the rear cover of types 0, 1 & 2 is then automatically disabled.



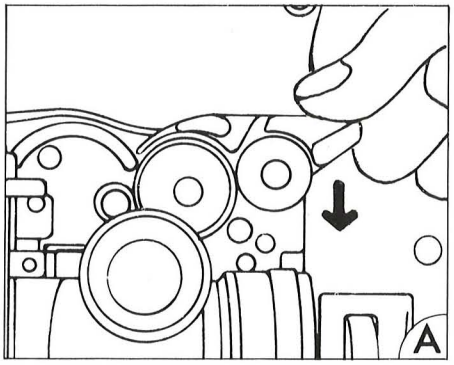
SPEAKER FOR NST, NT-1, 2, 3

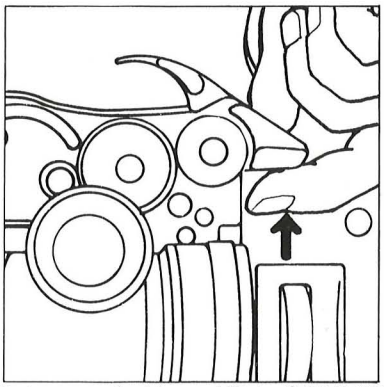


REWINDING (USA & CANADA ONIY)

1. Attach tail end of film to the supply reel.
2. Push rewind lever DOWN to REWIND position (Fig. A). Engaging the rewind mechanism and turning on the motor.
   After rewinding, turn rewind lever UP to OPERATE position. Disengaging the mechanism and turning off the motor.

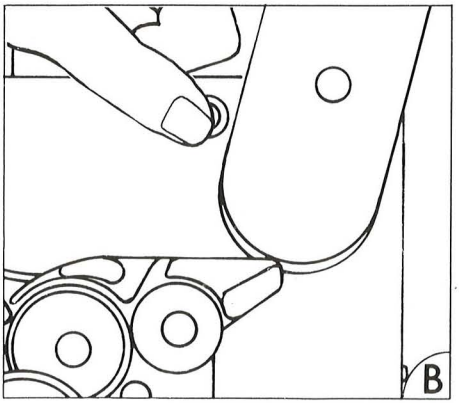
Push Rewind Lever Down To Rewind





Return rewind lever UP to OPERATE

3. After removing reels from the arms, depress arm locking buttons (Fig. B) and lower arms.

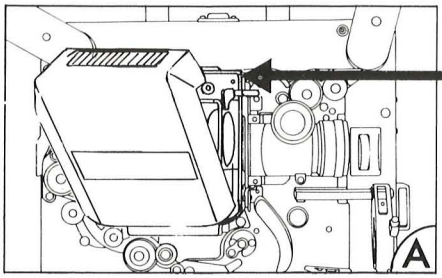


CHANGING LAMPS

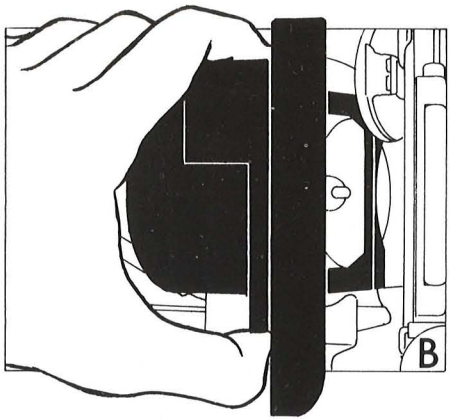
Disconnect power cord.

PROJECTION LAMP (ELC/24V 250W)

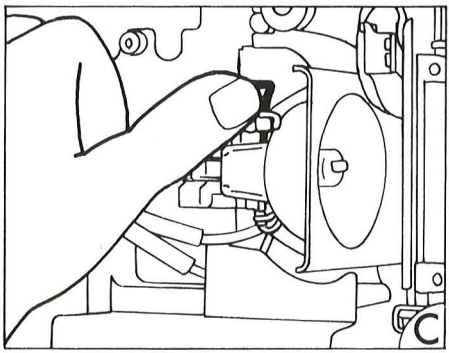
To open the lamp house door, remove the lock screw and pull out from the top of the lamp house.



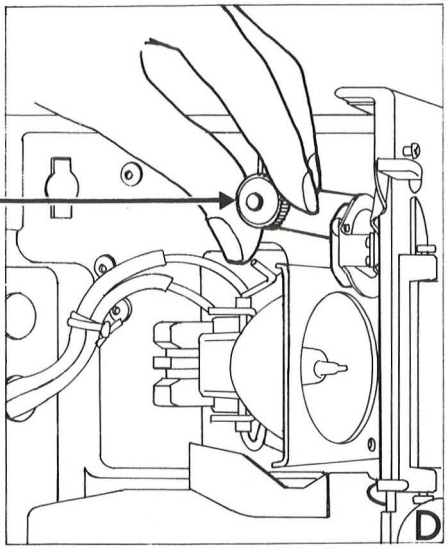
Remove the black heat shield, by pulling straight towards you. (Fig. B) (Caution shield may be not)



Push to left ejection lever immediately above lamp and lamp will come out (Fig. C). Be sure replacement lamp snaps into place.
Proper seating of lamp is essential.



The lamp position may be adjusted for maximum evenness of illumination, allowing for small variations in lamps.



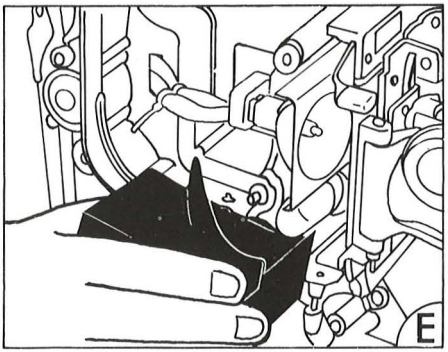
EXCITER LAMP (BRK/4V 0.75A)

Pull out on black exciter lamp cover (Fig. E).

Push in on lamp and turn counter-clockwise to remove.

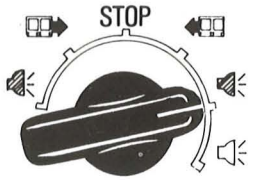
Insert new lamp with notch on base flange in upper right position, turn clockwise, clean fingerprints from lamp, and replace cover.

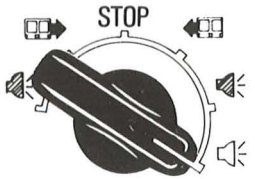
Close lamp house door and replace lock-in screw.



HI-LO LAMP SWITCH

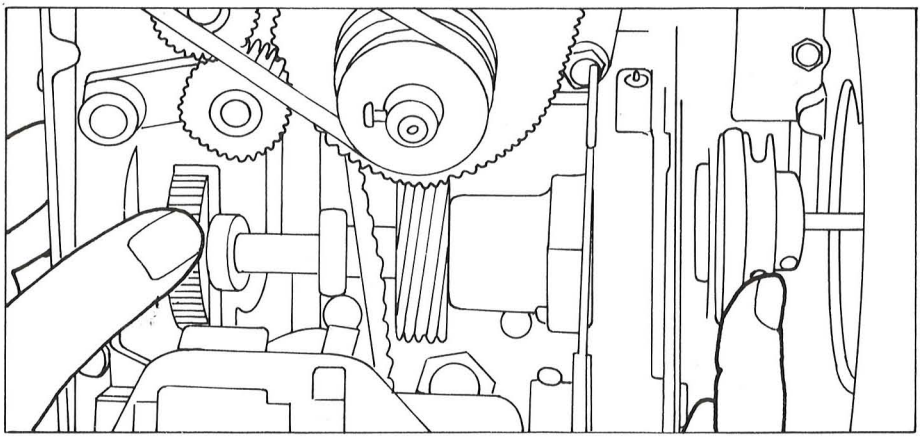
LAMP HI-LOW SWITCH (for maximum life)
By switching to LOW position (🔉) your lamp will last 3 times longer and even in this LOW position the lamp output will be minimum 675 lumens.
The HIGH position (🔊) should be used for larger audiences, or when room light is too bright.
In HIGH position the projector light will be about 900 lumens on the screen.

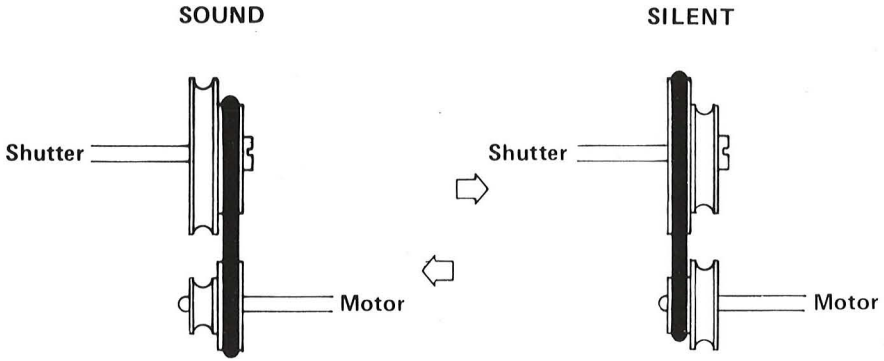




SILENT FILM OPERATIONS

DISCONNECT POWER SUPPLY CORD





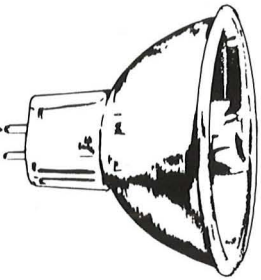
This is changed by slipping the motor drive belt to the alternate set of pulleys.

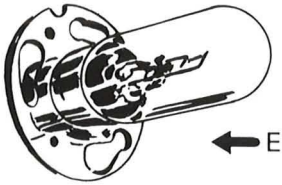
Open rear cover. Turn inching knob at the same time guiding the belt first to the smaller motor pulley then to the larger shutter pulley. Change back to sound speed by reversing the above procedure.

(Note. No silent speed on 50/60Hz models.)

RECOMMENDED SPARE PARTS AND ACCESSORIES

Projection Lamps – ELC/24V 250W
If replacement ELC lamp is not available, a 24V-200W EJL lamp may be used. The EJL gives about 20% less light.

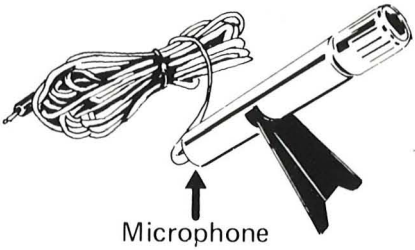




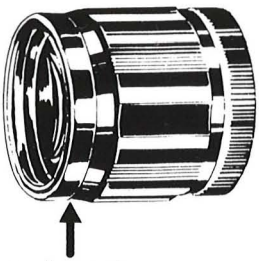
Exciter Lamp BRK/4V 0.75 amp

Fuse 2 amp (Exciter lamp)

Fuse 2 amp (Amplifier)

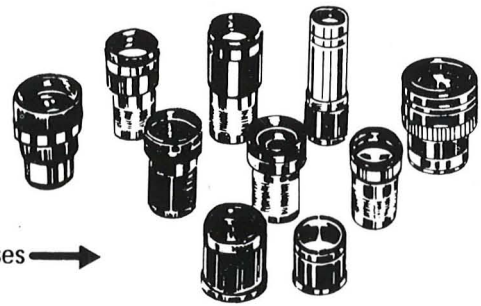


Microphone



Zoom lens attachment
(Continuously variable from 38mm (1-1/2") to 65mm (2-1/2") with standard prime lens)

Anamorphic lens and holder

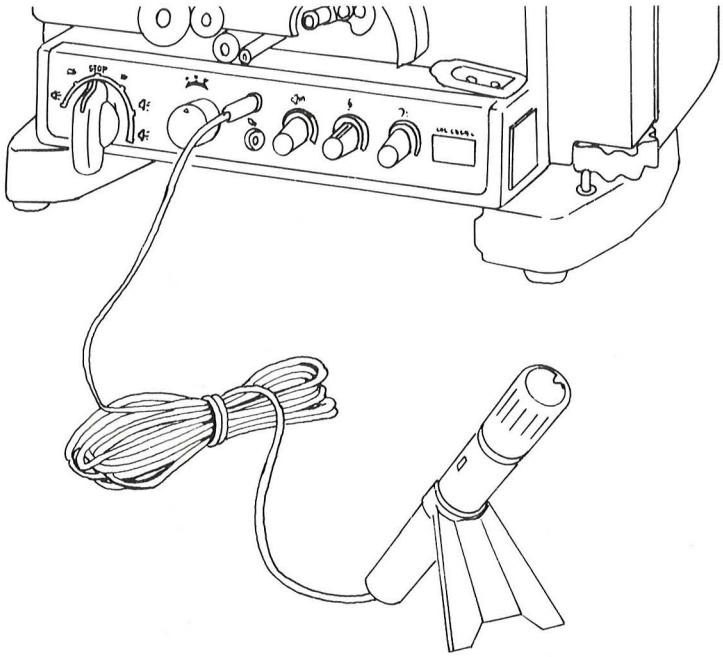


Additional lenses

SPECIAL APPLICATIONS

A. USING PROJECTOR AS A P.A. SYSTEM

Using projector as a P.A. system, simply plug an accessory microphone into the amplifier mic jack.

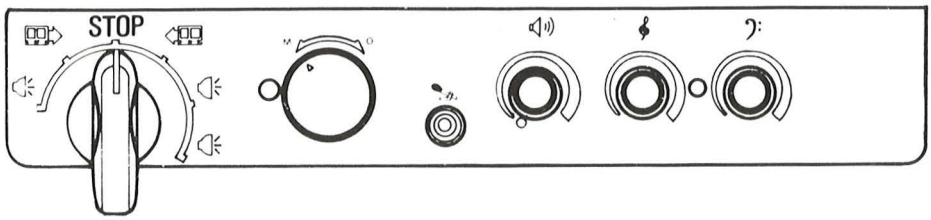


Turn on the amplifier and adjust the volume and tone controls as necessary.

NOTE: It is recommended that the P.A. mic be used with the projector plugged into the external speakers, and that the speakers be located away from the projector.

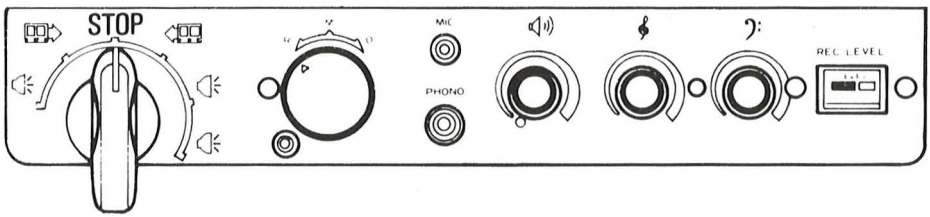
B. MAGNETIC SOUND TRACK PLAYBACK (NST-2/3, NT-2/3)

1. To reproduce a previously recorded magnetic sound track, turn the Opt/Mag switch to the (M) position. The projector may then be operated as usual.



C. MAGNETIC SOUND TRACK RECORDING. (Model NST-3, NT-3)

1. To record on the magnetic sound track plug in the microphone or other sound source to be used. Turn the Opt/Mag switch to (R) with the record interlock button depressed.

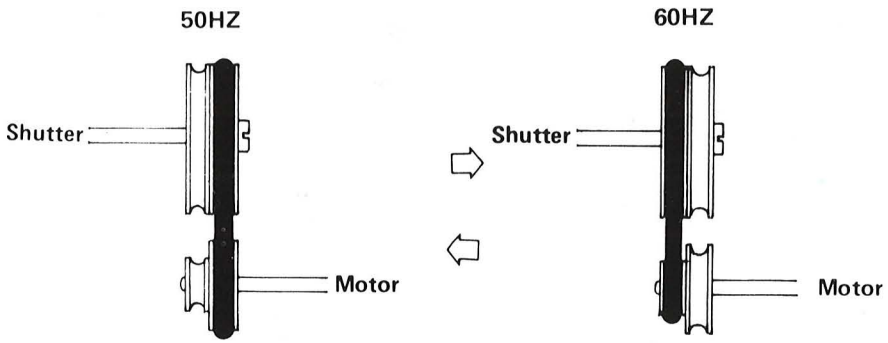


2. Adjust the volume control for the proper record level as indicated on the Rec Level meter.
   The indicator should only peak into the red area occasionally.
3. Since the majority of films may be optical it is a good idea to return the switch to optical for the next user.

D. 50HZ TO 60HZ CONVERSION

The standard NST & NT projector is available either as 50Hz sound and silent or 60Hz sound and silent operations. Conversion from 50 to 60Hz or 60 to 50Hz can be accomplished by changing the motor pulley only.

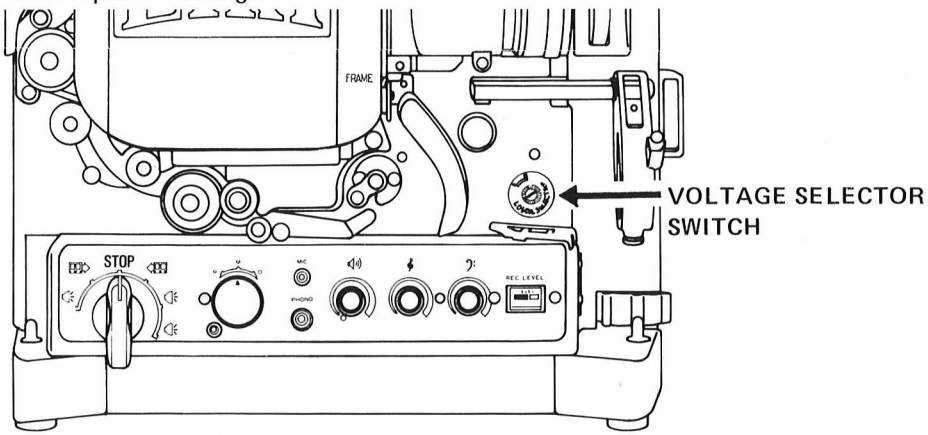
To allow the projector to be operated at either 50 or 60Hz sound only, it is necessary to change the motor pulley and the cam tank pulley (Shutter Pulley). It is now possible to change frequency by simply shifting the motor drive belt.



E. MULTIPLE VOLTAGE APPLICATIONS

Where more than one electrical power source is common, dual, selective voltage models are available.

To select the appropriate voltage, locate the voltage selector, and adjust to the required voltage.



To change from 50Hz to 60Hz or 60Hz to 50Hz, simply change the position of the motor belt. (See above)

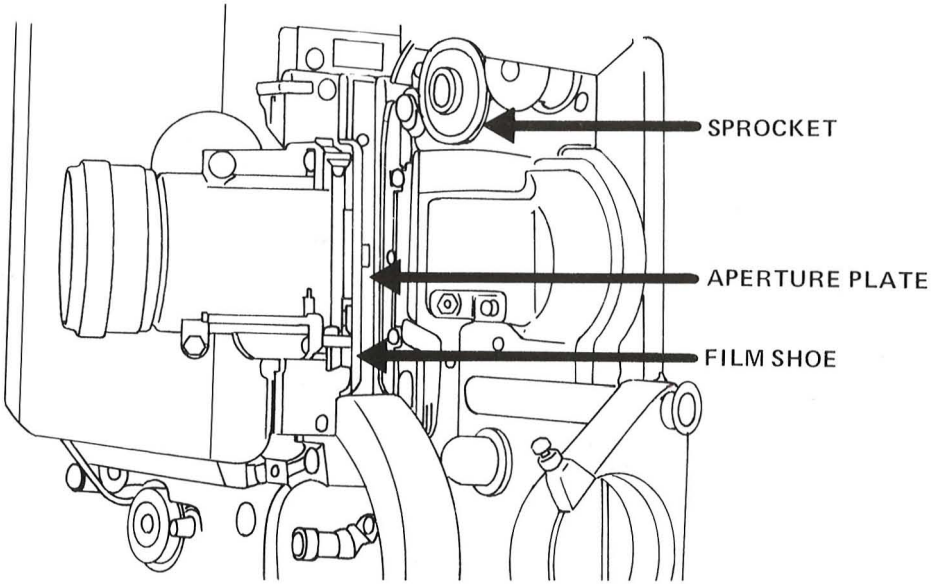
CLEANING AND MAINTENANCE

The EIKI projector has been designed to provide years of trouble free services.

All maintenance such as lubrications and adjustments should be referred to a qualified EIKI service technician.

To keep your projector looking and operating like new the following items should be checked and cleaned by the operator.

1. Lens – Clean with soft lens tissue.



2. Film gate and aperture plate – Remove and clean with a soft brush.
3. Film rollers – Clean and wipe dry with isopropyl alcohol.
4. Sound focus lens – Brush or blow off dust and lint.
5. Projector: Wipe off with a damp cloth and keep closed when projector is not in use.
   The front elevator feet should always be up before transporting or storing the projector.

Do not oil or lubricate any part of this projector. Refer to your authorized EIKI dealer.

OPERATOR TROUBLESHOOTING GUIDE

SYMPTOM	CHECK
No power to motor or lamp (Pilot lamp not on)	1. Be sure projector is plugged in and the outlet has power 2. Check power cord 3. Motor thermal fuse is defective or motor module is not plugged in
Motor runs but film doesn't advance	1. Motor belt off or broken 2. Check position of still picture lever
Motor runs too fast or too slow	1. Belt not on the correct motor pulley
Motor runs, film advances, lamp does not come on	1. Function switch not in lamp position 2. Defective lamp 3. Transformer module lamp plug disconnected or defective
Won't thread properly	1. Film channel and rewind lever not in the operate position 2. Film gate not properly closed 3. The automatic threading control lever not pushed to the thread position
No sound (Exciter lamp on)	1. Amplifier volume control not turned up 2. On magnetic playback models make sure switch is in the correct position 3. 2 amp amplifier fuse defective
No sound (Exciter lamp not on)	1. Amplifier volume control not turned on 2. Defective exciter lamp 3. 2 amp exciter lamp fuse defective 4. Amplifier not plugged in

SYMPTOM	CHECK
Poor sound	1. Check position of volume control 2. Check position of tone controls 3. Check for correct exciter lamp (BRK) 4. Check for dirt in the solar cell 5. Check film, may be defective 6. Clean exciter lamp 7. Speaker defective
Poor picture	1. Remove and clean film gate and aperture 2. Clean lens with a soft tissue both front and rear 3. Refocus lens 4. Film may be defective
Poor illumination	1. Hi-low lamp switch in low position 2. Lamp incorrectly aligned 3. Defective lamp

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